



...eine starke Verbindung

DECLARATION OF PERFORMANCE
DoP No. MKT-132 - en

1. Unique identification code of the product-type: **MKT Drop-in Anchor E / ES**
2. Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4):

ETA-05/0116, Annex A4
Batch number: see packaging of the product.

3. Intended use or uses of the construction product, in accordance with the applicable harmonised technical specification, as foreseen by the manufacturer:

generic type	deformation-controlled expansion anchor
for use in	cracked or non-cracked concrete C20/25 - C50/60 (EN 206): covered sizes: all cracked or non-cracked concrete C12/15 – C50/60 (EN 206) and precast pre-stressed hollow core slabs C30/37 – C50/60: covered sizes: ES M6x25, ES M8x25, ES M10x25, ES M12x25
	for multiple use for non-structural applications in concrete
option	ETAG 001-06
loading	static or quasi-static
material	<u>steel galvanised:</u> dry internal conditions only covered sizes: ES M6x25, E/ES M6x30, ES M8x25, E/ES M8x30, E/ES M8x40, ES M10x25, ES M10x30, E/ES M10x40, ES M12x25, E/ES M12x50, E/ES M16x65 <u>stainless steel (marking A4):</u> internal and external use without particular aggressive conditions covered sizes: E/ES M6x30, E/ES M8x30, E/ES M8x40, E/ES M10x40, E/ES M12x50, E/ES M16x65 <u>high corrosion resistant steel (marking HCR):</u> internal and external use with particular aggressive conditions covered sizes: E/ES M6x30, E/ES M8x30, E/ES M8x40, E/ES M10x40, E/ES M12x50, E/ES M16x65
temperature range (if applicable)	--

4. Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11(5):

MKT Metall-Kunststoff-Technik GmbH & Co. KG
Auf dem Immel 2
D - 67685 Weilerbach

5. Where applicable, name and contact address of the authorised representative whose mandate covers the tasks specified in Article 12(2): --
6. System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V: **System 2+**
7. In case of the declaration of performance concerning a construction product covered by a harmonised standard: --

8. In case of the declaration of performance concerning a construction product for which a European Technical Assessment has been issued:

issued **Deutsches Institut für Bautechnik, Berlin**
 on the basis of **ETA-05/0116**
ETAG 001-6

The notified body 1343-CPR performed under system 2+:

- (i) initial inspection of the manufacturing plant and of factory production control;
- (ii) continuous surveillance, assessment and evaluation of factory production control.

and issued: Certificate of constancy of performance 1343-CPR-M 550-7 / 08.14

9. Declared performance:

Essential Characteristics	Design Method	Performance	Harmonized Technical Specification
characteristic resistance for tension	ETAG 001, Annex C	Annex C1-C3	ETAG 001
	CEN/TS 1992-4		
characteristic resistance for shear	ETAG 001, Annex C	Annex C1-C3	
	CEN/TS 1992-4		
characteristic resistance under fire exposure	ETAG 001, Annex C	Annex C4-C5	
	CEN/TS 1992-4		

Where pursuant to Article 37 or 38 in the Specific Technical Documentation has been used, the requirements with which the product complies: --

10. The performance of the product identified in points 1 and 2 is in conformity with the declared performance in point 9.

This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 4.

Signed for and on behalf of the manufacturer by:


Stefan Weustenhagen
 (General Manager)
 Weilerbach, 04.01.2017

i.V. 
Dipl.-Ing. Detlef Bigalke
 (Director of product development)



Table C1: Characteristic resistance for $h_{ef} \geq 30$ mm in solid concrete slabs

Anchor size			M6x30	M8x30	M8x40	M10x30	M10x40	M12x50	M16x65
Load in any direction									
Characteristic resistance in concrete C20/25 to C50/60	F^{0}_{RK}	[kN]	3	5	6	6	6	6	16
Partial safety factor	γ_M	[-]	1,8	2,16		2,1	2,16	1,8	1,8
Spacing	s_{cr}	[mm]	130	180	210	230	170	170	400
Edge distance	c_{cr}	[mm]	65	90	105	115	85	85	200
Shear load with lever arm, Steel zinc plated									
Characteristic resistance (Steel 4.6)	$M^{0}_{RK,s}{}^1$	[Nm]	6,1	15	15	30	30	52	133
Partial safety factor	γ_{Ms}	[-]	1,67						
Characteristic resistance (Steel 4.8)	$M^{0}_{RK,s}{}^1$	[Nm]	6,1	15	15	30	30	52	133
Partial safety factor	γ_{Ms}	[-]	1,25						
Characteristic resistance (Steel 5.6)	$M^{0}_{RK,s}{}^1$	[Nm]	7,6	19	19	37	37	65	166
Partial safety factor	γ_{Ms}	[-]	1,67						
Characteristic resistance (Steel 5.8)	$M^{0}_{RK,s}{}^1$	[Nm]	7,6	19	19	37	37	65	166
Partial safety factor	γ_{Ms}	[-]	1,25						
Characteristic resistance (Steel 8.8)	$M^{0}_{RK,s}{}^1$	[Nm]	12	30	30	59	60	105	266
Partial safety factor	γ_{Ms}	[-]	1,25						
Shear load with lever arm, Stainless steel A4 / HCR									
Characteristic resistance (Property class 70)	$M^{0}_{RK,s}{}^1$	[Nm]	11	26	26	-	52	92	233
Partial safety factor	γ_{Ms}	[-]	1,56						
Characteristic resistance (Property class 80)	$M^{0}_{RK,s}{}^1$	[Nm]	12	30	30	-	60	105	266
Partial safety factor	γ_{Ms}	[-]	1,33						

1) Characteristic bending moment $M^{0}_{RK,s}$ for equation (5.5) in ETAG 001, Annex C or for equation (14) in CEN/TS 1992-4-4

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Performance
 Characteristic resistance for $h_{ef} \geq 30$ mm in solid concrete

Annex C1

Table C2: Characteristic resistance for $h_{ef} = 25$ mm in solid concrete slabs

Anchor size			M6x25	M8x25	M10x25	M12x25
Load in any direction						
Characteristic resistance in concrete C12/15 and C16/20	F^{0}_{Rk}	[kN]	2,5	2,5	3,5	3,5
Characteristic resistance in concrete C20/25 to C50/60	F^{0}_{Rk}	[kN]	3,5	4,0	4,5	4,5
Partial safety factor	γ_M	[-]	1,5			
Spacing	s_{cr}	[mm]	75	75	75	75
Edge distance	c_{cr}	[mm]	38	38	38	38
Shear load with lever arm						
Characteristic resistance (Steel 4.6)	$M^{0}_{Rk,s}{}^1$	[Nm]	6,1	15	30	52
Partial safety factor	γ_{Ms}	[-]	1,67			
Characteristic resistance (Steel 4.8)	$M^{0}_{Rk,s}{}^1$	[Nm]	6,1	15	30	52
Partial safety factor	γ_{Ms}	[-]	1,25			
Characteristic resistance (Steel 5.6)	$M^{0}_{Rk,s}{}^1$	[Nm]	7,6	19	37	65
Partial safety factor	γ_{Ms}	[-]	1,67			
Characteristic resistance (Steel 5.8)	$M^{0}_{Rk,s}{}^1$	[Nm]	7,6	19	37	65
Partial safety factor	γ_{Ms}	[-]	1,25			
Characteristic resistance (Steel 8.8)	$M^{0}_{Rk,s}{}^1$	[Nm]	12	30	60	105
Partial safety factor	γ_{Ms}	[-]	1,25			

¹⁾ Characteristic bending moment $M^{0}_{Rk,s}$ for equation (5.5) in ETAG 001, Annex C or for equation (14) in CEN/TS 1992-4-4

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Performance

Characteristic resistance for $h_{ef} = 25$ mm in solid concrete

Annex C2

Table C3: Characteristic resistance for $h_{ef} = 25$ mm in precast pre-stressed hollow core slabs

Anchor size		M6x25	M8x25	M10x25	M12x25
Load in any direction					
Flange thickness	d_b	[mm]	≥ 35 (30) ¹⁾		
Characteristic resistance in precast pre-stressed hollow core slabs C30/37 to C50/60	F_{Rk}	[kN]	3,5	4,0	4,5
Partial safety factor	γ_M	[-]	1,5		
Spacing	s_{cr}	[mm]	200		
Edge distance	c_{cr}	[mm]	150		
Shear load with lever arm					
Characteristic resistance (Steel 4.6)	$M^0_{Rk,s}{}^2)$	[Nm]	6,1	15	30
Partial safety factor	γ_{Ms}	[-]	1,67		
Characteristic resistance (Steel 4.8)	$M^0_{Rk,s}{}^2)$	[Nm]	6,1	15	30
Partial safety factor	γ_{Ms}	[-]	1,25		
Characteristic resistance (Steel 5.6)	$M^0_{Rk,s}{}^2)$	[Nm]	7,6	19	37
Partial safety factor	γ_{Ms}	[-]	1,67		
Characteristic resistance (Steel 5.8)	$M^0_{Rk,s}{}^2)$	[Nm]	7,6	19	37
Partial safety factor	γ_{Ms}	[-]	1,25		
Characteristic resistance (Steel 8.8)	$M^0_{Rk,s}{}^2)$	[Nm]	12	30	60
Partial safety factor	γ_{Ms}	[-]	1,25		

¹⁾ The anchor may be set in a flange thickness of 30 mm with identical characteristic loads, if the borehole cuts no hollow core.

²⁾ Characteristic bending moment $M^0_{Rk,s}$ for equation (5.5) in ETAG 001, Annex C or for equation (14) in CEN/TS 1992-4-4

Drop-in Anchor E / ES

Performance

Characteristic resistance for $h_{ef} = 25$ mm in precast pre-stressed hollow core slabs

Annex C3

Table C4: Characteristic values under fire exposure in solid concrete slabs C20/25 to C50/60 for $h_{ef} \geq 30$ mm

Anchor size				M6x30	M8x30	M8x40	M10x30	M10x40	M12x50	M16x65	
Fire resistance class		Load in any direction									
Steel 4.6	R 30	Characteristic resistance	$F^{0}_{Rk,fi}$	[kN]	0,4	0,6	0,6	0,9	0,9	1,5	3,1
	R 60			[kN]	0,35	0,6	0,6	0,8	0,8	1,3	2,4
	R 90			[kN]	0,30	0,6	0,6	0,6	0,6	1,1	2,0
	R 120			[kN]	0,25	0,5	0,5	0,5	0,5	0,8	1,6
Steel 4.8	R 30	Characteristic resistance	$F^{0}_{Rk,fi}$	[kN]	0,4	0,9	1,1	0,9	1,5	1,5	4,0
	R 60			[kN]	0,35	0,9	0,9	0,9	1,5	1,5	4,0
	R 90			[kN]	0,3	0,6	0,6	0,9	1,1	1,5	3,0
	R 120			[kN]	0,3	0,5	0,5	0,7	0,9	1,2	2,4
Steel ≥ 5.6	R 30	Characteristic resistance	$F^{0}_{Rk,fi}$	[kN]	0,8	0,9	1,5	0,9	1,5	1,5	4,0
	R 60			[kN]	0,8	0,9	1,5	0,9	1,5	1,5	4,0
	R 90			[kN]	0,4	0,9	0,9	0,9	1,5	1,5	3,7
	R 120			[kN]	0,3	0,5	0,5	0,7	1,0	1,2	2,4
A4 / HCR	R 30	Characteristic resistance	$F^{0}_{Rk,fi}$	[kN]	0,8	0,9	1,5	-	1,5	1,5	4,0
	R 60			[kN]	0,8	0,9	1,5	-	1,5	1,5	4,0
	R 90			[kN]	0,4	0,9	0,9	-	1,5	1,5	3,7
	R 120			[kN]	0,3	0,5	0,5	-	1,0	1,2	2,4
Partial safety factor $\gamma_{M,fi}$				[-]	1,0						
Steel zinc plated											
R 30 – R 120	Spacing		$s_{cr,fi}$	[mm]	130	180	210	170	170	200	400
	Edge distance		$c_{cr,fi}$	[mm]	65	90	105	85	85	100	200
	If the fire attack is from more than one side, the edge distance shall be ≥ 300 mm.										
Stainless steel A4, HCR											
R 30 – R 120	Spacing		$s_{cr,fi}$	[mm]	130	180	210	-	170	200	400
	Edge distance		$c_{cr,fi}$	[mm]	65	90	105	-	85	100	200
	If the fire attack is from more than one side, the edge distance shall be ≥ 300 mm.										

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Performance
Characteristic values under fire exposure for $h_{ef} \geq 30$ mm

Annex C4

Table C5: Characteristic values under fire exposure in solid concrete slabs C20/25 to C50/60 for $h_{ef} = 25$ mm

Anchor size		M6x25	M8x25	M10x25	M12x25		
Fire resistance class		Load in any direction					
Steel ≥ 4.6	R 30	Characteristic resistance $F^{0}_{Rk,fi}$	[kN]	0,4	0,6	0,6	0,6
	R 60		[kN]	0,35	0,6	0,6	0,6
	R 90		[kN]	0,30	0,6	0,6	0,6
	R 120		[kN]	0,25	0,5	0,5	0,5
Partial safety factor $\gamma_{M,fi}$		[-]	1,0				
R 30 – R 120	Spacing $s_{cr,fi}$	[mm]	100	100	100	100	
	Edge distance $c_{cr,fi}$	[mm]	50	50	50	50	
If the fire attack is from more than one side, the edge distance shall be ≥ 300 mm.							

Drop-in Anchor E / ES

Performance
Characteristic values under **fire exposure** for $h_{ef} = 25$ mm

Annex C5